REMARKS

I. Introduction

The Office Action rejected all the claims (i.e., claims 1-3, 17-19, and 21-39) under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,639,091 (Morales). In addition, the Office Action relied on *In re Gulack*, 217 USPQ 401 (CAFC 1983), a case involving printed matter, as a basis for rejecting all the claims.

The present response cancels claims 17-19 and 21-39; and adds new claims 40-48.

Reconsideration and allowance of the amended claims is respectfully requested.

II. Originally Filed Application Supports the New Claims

Since each of the new claims is supported by the originally filed application, their entry is respectfully requested. In particular, support for the new claims is present in the original application at, inter alia, the following locations:

Claim	Basis in Original Application
40	Original claim 1; page 1, line 24 through page 2, line 7; page 5, line 23 through page 8, line 6; Figures 1-2.
41, 44	Original claim 2; page 5 lines 23-28; page 6, lines 5-10; page 6, line 14 through page 7, line 8; Figures 1-2.
42, 45	Original claim 3; page 6, line 14 through page 7, line 8.

Claim	Basis in Original Application (continued)
43	Page, 5, lines 23 through page 8, line 6; Figures 1-2.
46	Original claims 17-19; page 4, lines 1-19; page 7, line 10 through page 8, line 8; Figure 3
47-48	Page 4, lines 1-19; page 7, line 10 through page 8, line 8; Figure 3.

Regarding the language "each playing card ... has a numerical value" of claims 40 and 46, this language merely states a well know property of playing cards readily recognized by persons of ordinary skill in the art. As evidence of this fact, the following three items accompany this response:

1. Merrian-Webster Online Dictionary's definition of playing card, that states, in part:

   playing card ... one of a set of 24 to 78 thin rectangular pieces of paperboard or plastic marked on one side to show **its rank** and suit ... (emphasis added)

2. The American Heritage® Dictionary of the English Language: Fourth Edition. 2000 definition of pip, that states, in part:

   pip ... 1. Games ... b. A mark indicating the suit or **numerical value of a playing card**. ... (emphasis added)

3. The United States Playing Card Company, General Rules That Apply to All Card Games, that states in part:

   The Pack. The standard 52-card pack is used. It contains four suits, **each identified by its symbol, or "pip"**: spades (♠), hearts (♡), diamonds (◇), and clubs (♣). There are thirteen cards of each

suit: ace (A), king (K), queen (Q), jack (J), **10, 9, 8, 7, 6, 5, 4, 3, 2**. (Emphasis added.)

Accordingly, as evidenced by the above excerpts, persons of ordinary skill in the art of playing cards recognize that when one side of a playing card is marked with a pip or number (such as the playing cards described in Applicant's specification and shown in his Figures 1-3), the playing card has a numerical value and the pip or number indicates the numerical value of that playing card. Therefore, the language "each playing card ... has a numerical value" of claims 40 and 46 merely recites a property recognized by persons of ordinary skill in the art as being necessarily present in the playing cards of Applicant's claimed deck.

Accordingly, because the originally filed application supports the new claims, their entry is respectfully requested.

III. Rejections of Claims 17-19, and 21-39 Rendered Moot

The cancellation of claims 17-19 and 21-39 renders their rejections moot.

IV. *In re Gulack*

A. The Examiner's Reliance on *In re Gulack* is Misplaced

1. The Holding of *In re Gulack*

In re Gulack, 217 USPQ 401 (CAFC 1983) holds that when (1) the claim printed matter is functionally related to the substrate and (2) the functional relationship between the printed matter and the substrate is new and unobvious, the printed matter distinguishes the invention from the prior art in terms of

patentability. For example, *In re Gulack* quotes the following language from *In re Miller*, 418 F.2d 1392, 164 USPQ 46, 48-49:

> The fact that printed matter *by itself* is not patentable subject matter, because non-statutory, is no reason for ignoring it when the claim is directed to a combination. Here there is a new and unobvious functional relationship between a measuring *receptacle*, volumetric *indicia* thereon indicating volume in a certain ratio to actual volume, and a *legend* indicating the ratio, and in our judgment the appealed claims properly define this relationship. *** (Emphasis in original.)

Therefore, in *In re Miller*, the CCPA held that when a new and unobvious functional relationship exists between the printed matter and the substrate, the printed matter distinguishes the invention from the prior art in terms of patentability.

Furthermore, in *In re Gulack*, 217 USPQ at 404, the Federal Circuit noted that:

> A functional relationship of the precise type found by the CCPA in Miller – to size or to type of substrate, or to **conveying information about the substrate** – is not required. What is required is the existence of *differences* between the appealed claims and the prior art sufficient to establish patentability. The bare presence or absence of a specific functional relationship, without further analysis is not dispositive of obviousness. Rather, the critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate. (Footnote omitted. Italics in original. Bolding by Appellant.)

Hence, the Federal Circuit's holding in *In re Gulack* (which is actually broader that the CCPA's holding in *In re Miller*) indicates that the precise type of functional relationship found by the CCPA in Miller is not required and that the

critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate.

2. The Claimed Printed Matter is Functionally Related to the Substrate

With respect to the issue of whether the claim printed matter is functionally related to the substrate, the printed matter is functionally related to the substrate because, as in *In re Miller*, the printed matter conveys information about the substrate. More specifically, in *In re Miller*, the printed matter on the receptacle (i.e., the substrate) conveyed information about the substrate (namely, the receptacle's volume in a certain ratio to actual volume). In an analogous manner, the printed matter on the playing card (i.e., the substrate) of claims 1-3 conveys information about the substrate (namely, the rank or numerical value of the playing card).

3. The Functional Relationship Between the Printed Matter and the Substrate is New and Unobvious

For the following reasons, the functional relationship between the printed matter (namely, the integer that corresponds to the numerical value of its respective playing card) and the substrate (namely, the face of the playing card) is both new and unobvious. With respect to novelty, the Examiner tacitly admits that the functional relationship between the printed matter and the substrate is new by rejecting claims 1-3 under 35 U.S.C. 103(a) instead of under 35 U.S.C. 102.

Regarding obviousness, the functional relationship between the printed matter (namely, the integer that corresponds to the numerical value of its

respective playing card) and the substrate (namely, the face of the playing card) is unobvious for the reasons discussed in section V below.

Accordingly, for the reasons discussed above and below, the Examiner's reliance on *In re Gulack* is misplaced.

V. The Office Action Has Failed to Carry Its Burden With Respect To Claims 1-3

The Office Action bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. See MPEP §2142. As quoted in MPEP §2142 from *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985):

> "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references."

For the following reasons, the Office Action has failed to carry its burden with respect to claims 1-3.

First, claims 1-3 require, inter alia, that the claimed deck comprise "sets of playing cards, where ... the sets of playing cards **consist of** a first set of playing cards and a second set of playing cards." (Emphasis added.) As noted in MPEP § 211.03:

> The transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim. *In re Gray*, 53 F.2d 520, 11 USPQ 255 (CCPA 1931); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("consisting of" defined as "closing

> the claim to the inclusion of materials other than those recited except for impurities ordinarily associated therewith.").

Accordingly, the "consist of" claim limitation of claims 1-3 mandates that **two, and only two, sets** of playing cards be present in the deck of claims 1-3.

In contrast, as can be seen from the following excerpts, Morales teaches that his deck consists of **four sets** of playing cards:

> The game apparatus of the present invention is a deck ... consisting of **four sets** of cards ... (Morales, column 1, lines 39-40; emphasis added.)
>
> ●●●
>
> What I claim as my invention is:
> 1. An educational game apparatus comprising:
> **four sets** of cards. ... (Morales, column 4, lines 36-39, claim 1; emphasis added.)

In view of the above excerpts, Morales teaches that his deck contains four sets of playing cards.

However, nothing in Morales teaches or suggests reducing the number of sets in his deck from four to two. For example, with respect to the statement in the Office Action that Morales "further teaches that modifications may be made without exceeding the scope of his invention", Morales' teaching as to the modifications that can be made to his invention is actually much more limited. In particular, at column 4, lines 26-34, Morales states that:

> Although the card game apparatus and the method of using the same according to the present invention are described in the foregoing specification with considerable detail, it is also to be understood that **modifications may be made to the invention**

> **which do not exceed the scope of the appended claims** ... .
> (Emphasis added.)

Accordingly, since Morales states that "modifications may be made to [his] invention which do not exceed the scope of [his] claims", one must examine Morales' sole claim to determine whether the claimed limitations of the deck of Applicant's claims 1-3 are within the modifications contemplated, permitted, or otherwise envisioned by Morales. Morales' sole claim (whose pertinent portion is quoted above) requires "four sets of cards". Therefore, since Morales teaches that "modifications may be made to [his] invention which do not exceed the scope of [his] claims" and since the "consisting of" limitation of Applicant's claims 1-4 limits the number of sets of playing cards in Applicant's claimed deck to two (thereby excluding the four sets taught by Morales's specification and required by his sole claim), Morales teaches away from the requirement of Applicant's claims 1-3 that the deck contain only **two sets** of cards.

Furthermore, as can be seen from the following excerpt, a deck containing four sets is **required** in order to play at least one of Morales' card games:

> 4. INTEGERS
>
> This game is similar to poker, having a hierarchy of hands that correspond to poker hands. For example, **four of the same integer (four of a kind)** would win over five consecutive integers (a straight). ... (Morales, column 3, lines 12-18; emphasis added.)

Accordingly, since his Integers card game must be played with a deck containing four sets, deleting two sets from Morales' deck would render the modified deck inoperative for its intended use in the Integers card game. As is well established, one skilled in the art would not modify the playing cards of Morales to make them unsuitable for their intended purpose. *Ex parte Rosenfeld*, 130 USPQ 113, 115

(POBA 1961). Hence, Morales, in effect, teaches away from reducing the number of suits in his deck from four to two. *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

In addition to limiting the number of sets per deck to two, claims 1-3 also require, inter alia, the claim limitations or elements listed below in Table A:

Table A

Additional Limitations or Elements of Claims 1-3
i. "each set comprises 2M + 1 playing cards"
ii. "each playing face of each playing card of the first set displays an integer within the range of –M to M which is different from all the other integers displayed on all the other playing faces of the playing cards of the first set"
iii. "each playing face of each playing card of the second set displays an integer within the range of –M to M which is different from all the other integers displayed on all the other playing faces of the playing cards of the second set"

Based upon the minimum value of M required by claims 1-3, the following Table B sets forth the minimum number of cards per set and the minimum range of integers per set.

Table B

Minimum Number of Cards and Minimum Integer Ranges Per Set for Claims 1-3

	Claim 1	Claim 2	Claim 3
Minimum value of M	10	12	13
Minimum number of cards per set	21	25	27
Minimum range of integers per set	-10 to 10	-12 to 12	-13 to 13

In contrast, as can be seen from Morales' FIG. 1 and the following excerpts from his specification, Morales only teaches decks (1) whose sets comprise only 13 playing cards per set and (2) whose playing faces only display integers within the range of -6 to +6:

> The deck consists of 52 cards, **each containing integers between -6 and +6**. (Morales, Abstract, lines 2-5; emphasis added.)

•••

> The game apparatus of the present invention is a deck of 52 cards, consisting of four sets of cards, **each marked with the integers -6 through +6, inclusive**. (Morales, column 1, lines 39-41; emphasis added.)

•••

> Thus, the deck is similar in configuration to a conventional deck having **thirteen numerical values (+6 to -6)**, four suits (+, -, x. ÷), and two colors (red and black). (Morales, column 2, lines 33-36; emphasis added.)

Accordingly, Morales only teaches that his sets consist of 13 playing cards and that the playing faces only display integers within the range of -6 to +6. Nothing in Morales teaches or suggests either increasing the number of playing cards per

set or increasing the range of integers displayed on the playing faces of playing cards or having the number of playing cards per deck exceed 52 (which latter event would happen if Morales deck were modified to include more than 13 cards per set).

Therefore, for the above reasons, withdrawal of the 103(a) rejection of claims 1-3 over Morales is respectfully requested.

VI. New Claims 40-48

For the following reasons, new claims 40-62 also patentable over the references.

A. New Claims 40-45

New claims 40-45 contain all the limitations set forth in claim 1 and, therefore, are patentable over Morales for the reasons discussed in preceding section V with respect to claim 1.

In addition, new claims 40-42 also require that (1) "the graphics displayed on each playing face of each playing card of the first set **consist of** at least one symbolic representation for the integer that corresponds to the numerical value of its respective playing card" and (2) "the graphics displayed on each playing face of each playing card of the second set **consist of** at least one symbolic representation for the integer that corresponds to the numerical value of its respective playing card". (Emphasis added.) Similarly, new claims 43-45 also require that (1) "the graphics displayed on each playing face of each playing card of the first set **consist of** a plurality of symbolic representations for the integer that corresponds to the numerical value of its respective playing card" and (2)

"the graphics displayed on each playing face of each playing card of the second set **consist of** a plurality of symbolic representations for the integer that corresponds to the numerical value of its respective playing card". (Emphasis added.) As mentioned above in section V, MPEP § 211.03 points out that the transitional phrase "consisting of" excludes, inter alia, any element not specified in the claim. Therefore, the "consist of " language of claims 40-45 excludes all graphics from the playing face of each playing card except for one or more symbolic representations for the integer that corresponds to the numerical value of its respective playing card.

In contrast, in addition to displaying the integers, Morales requires the playing faces of his playing cards to also display "suits". For example, Morales teaches that:

> The deck consists of 52 cards, each containing integers between -6 and +6. **There are four "suits," each being a different arithmetic operation symbol (e.g., addition, multiplication, etc.).** (Morales, Abstract, lines 2-5; emphasis added,)
>
> •••
>
> The game apparatus of the present invention is a deck of 52 cards, consisting of four sets of cards, each marked with the integers -6 through +6, inclusive. **Each set contains a notation indicating a different arithmetic operation; thus, one set indicates addition, another subtraction, still another multiplication, and finally, division.** (Morales, column 1, lines 38-45; emphasis added.)
>
> •••
>
> FIG. 1 shows the front faces of the game cards, the deck being divided into four columns **to display equal apportionment of** integers, **arithmetic operations**, and colors with the deck. (Morales, column 2, lines 11-14; emphasis added.)

•••

> Referring now to the drawings in greater detail, the invention 1 shown in FIG.1 consists of a plurality of playing cards ... **It can be further seen that the four basic mathematical operations are indicated on the cards (+, -, x, and ÷), also equally apportioned so that each card contains a different combination of arithmetic operation and integer notations.** ... Thus, the deck is similar in configuration to a conventional deck having ... **four suits (+, -, x, and ÷)** ... (Morales, column 2, lines 22-36; emphasis added.)
>
> What I claim as my invention is:
> 1. An educational game apparatus comprising:
>
> •••
>
> a first set of said having a **plus sign thereon**;
> a second set of said having a **minus sign thereon**;
> a third set of said having a **multiplication sign thereon**; and
> a fourth set of said having a **division sign thereon**. (Morales, column 4, lines 36-48, claim 1; emphasis added.)

Accordingly, Morales teaches that the playing faces of his playing cards, in addition to displaying integers, must also display "suits" in the form of different arithmetic operations (i.e., plus, minus, multiplication, and division signs). Hence, Morales requires that the face of his playing cards display elements (namely, suits) that are excluded by the "consist of" language of Applicant's claims 40-45.

Furthermore, as can be seen from the following excerpts, a deck composed of playing cards whose playing faces display suits is required in order to play at least two of Morales' card games:

3. ADDING; SUBTRACTING; MULTIPLYING; DIVIDING

> The players each draw two cards on a given play. **The child must perform the operation indicated on the first card with the two integers. ... For example, if a player drawers a pair denoting (6+,4x), his value for the draw is 10 (adding six and four), but if he draws (4x,6+), his value would be 24 (multiplying four and six).**

•••

4. INTEGERS

•••

> A hand with consecutive integers in which all the cards contain the same **arithmetic operation** would be the equivalent of a straight flush, and so on. ... (Morales, column 2, line 61 through column 3, line 21; emphasis added.)

Accordingly, since Morales' above quoted card games must be played with a deck whose playing faces display arithmetic operations (i.e., suits), deleting the arithmetic operations or suits from the playing faces of Morales' playing cards would render the modified deck inoperative for its intended use in these card games. As previously mentioned, one skilled in the art would not modify the playing cards of Morales to make them unsuitable for their intended purpose. *Ex parte Rosenfeld*, supra. Therefore, Morales, in effect, also teaches away from eliminating the arithmetic operations (i.e., the suits) from the face of his playing cards. *In re Gordon*, supra.

B. New Claims 46-48

New claims 46-48 are patentable over Morales because each of these claims mandate that the integers displayed on the playing faces of playing cards

of the claimed deck be selected from the group consisting of 0 and positive integers. In particular, claim 46 requires that:

> 46. A deck comprising four sets of playing cards, where:
>
> (a) **each set consists of M + 1 playing cards**;
>
> •••
>
> (d) each playing face of each playing card of the first set displays at least one representation of an integer that corresponds to the numerical value of its respective playing card so that **the integers displayed on the playing faces of the playing cards of the first set consist of integers within the range of 0 to M**;
>
> •••
>
> (f) each playing face of each playing card of the second set displays at least one representation of an integer that corresponds to the numerical value of its respective playing card so that **the integers displayed on the playing faces of the playing cards of the second set consist of integers within the range of 0 to M**;
>
> •••
>
> (h) each playing face of each playing card of the third set displays at least one representation of an integer that corresponds to the numerical value of its respective playing card so that **the integers displayed on the playing faces of the playing cards of the third set consist of integers within the range of 0 to M**;
>
> •••
>
> (j) each playing face of each playing card of the fourth set displays at least one representation of an integer that corresponds to the numerical value of its respective playing card so that **the integers displayed on the playing faces of the playing cards of the fourth set consist of integers within the range of 0 to M**; ... (Emphasis added.)

As previously mentioned in above sections V and VI(A), MPEP § 211.03 points out that the transitional phrase "consisting of" excludes, inter alia, any element not specified in the claim. Therefore, the "consist of " language of claims 46-48 excludes all integers less that 0 (i.e., excludes all negative integers) from the playing face of each playing card.

In contrast, in addition to displaying 0 and positive integers, Morales' requires the playing faces of his playing cards to also display negative integers. For example, Morales teaches that:

> The deck consists of 52 cards, **each containing integers between -6 and +6**. (Morales, Abstract, lines 2-3; emphasis added,)
>
> •••
>
> The game apparatus of the present invention is a deck of 52 cards, consisting of four sets of cards, **each marked with the integers -6 through +6, inclusive**. (Morales, column 1, lines 38-40; emphasis added.)
>
> •••
>
> Referring now to the drawings in greater detail, the invention 1 shown in FIG.1 consists of a plurality of playing cards 2, **each marked with an integer between -6 and +6, inclusive, with each integer indicated on four of the cards**. ... Thus, the deck is similar in configuration to a conventional deck having **thirteen numerical values (+6 to -6)** ... (Morales, column 2, lines 22-35; emphasis added.)
>
> What I claim as my invention is:
> 1. An educational game apparatus comprising:
>
> •••

> **each set having integers from +6 through -6 displayed thereon,** ... (Morales, column 4, lines 36-40, claim 1; emphasis added.)

Accordingly, Morales teaches that the playing faces of his playing cards, in addition to displaying 0 and positive integers, must also display negative integers. Hence, Morales requires that the faces of his playing cards display elements (namely, negative integers) that are excluded by the "consist of" language of Applicant's claims 46-48.

Furthermore, as can be seen from the following excerpts, all but one of the games described by Morales require that some of the playing faces of his playing cards display negative integers:

> 1. MATCHING
>
> •••
>
> This simple game is designed to teach young children the distinction between positive and **negative integers**.
>
> 2. GREATER OR LESS THAN
>
> •••
>
> This again reinforces the concepts of positive and **negative**, and numerical value.
>
> •••
>
> 4. INTEGERS
>
> •••
>
> This game would emphasize ... the concepts of positive and **negative** value.

5. SIX IN THE CORNER

•••

For example, **the only cards which can be placed on top of a (-3) are (-4) or (-2).**

•••

6. SPEED

•••

For example, **if the card face up is a -5, the player has two options: either place a -4, or a -6 on top of the -5**. ... (Morales, column 2, line 45 to column 4, line 8; emphasis added.)

Accordingly, since Morales' above quoted card games must be played with a deck whose playing faces display negative integers, deleting the negative integers from the playing faces of Morales' playing cards would render the modified deck inoperative for its intended use in these card games. As previously mentioned, one skilled in the art would not modify the playing cards of Morales to make them unsuitable for their intended purpose. *Ex parte Rosenfeld*, supra. Therefore, Morales, in effect, also teaches away from eliminating the negative integers from the face of his playing cards. *In re Gordon*, supra.

VIII. Conclusion

In view of the foregoing remarks, allowance of claims 1-3 and 40-48 is respectfully requested.

The Examiner is encouraged to telephone the undersigned if a verbal discussion would help expedite the prosecution of the application.

Respectfully submitted,

Shlomo R. Frieman
139 South Mansfield Avenue
Los Angeles, California 90036-3018
Telephone: 323 857 1390
Fax: 323 857 1131

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the USPTO on the date shown below.

Dec 4/05
Date

Shlomo R. Frieman